

REMARKS:

Claims 1-17 are in the case and presented for reconsideration.

The undersigned thanks the Examiner for the time and effort of the telephone interview of today during which this application was discussed. During that interview, the undersigned discussed the references to Maimets, Wrightson et al., Walker and Siegel and attempted to point out the distinctions between those references and claim 1 as now presented.

Generally, although rolled-up sleeves are taught, for example, by the Wrightson et al. reference (U.S. Patent 4,347,018), there seems to be a universal teaching to include some sort of adhesive between the inner surface of the pipe and the outer surface of the patching structure. This is clearly evidenced by the Walker reference (U.S. Patent 6,703,091) which has a distinct step shown at 23 in Fig. 1 of applying adhesive 22 between the inner surface of the pipe to be lined and the outer surface of multiple rings 38 which form a substantially continuous liner 10 and which adhere outer surface of the liner to the inner surface of the pipe.

It was agreed during the interview that an additional limitation would be added to a former version of claim 1 that had been proposed to the Examiner, to the effect that the pipe piece (17, 17') of the claim be in direct contact with the inner wall of the pipe and further that there be no coating material (e.g., adhesive) between the pipe piece and the pipe. This has the effect that the unperforated material piece formed by the pipe piece has no ability to seal the hole in the pipe by itself.

This gives further importance to the last step of claim 1 which is the step of spraying the fluid coating material (shown at 8 in Fig. 7) onto "an inner surface of the pipe piece (17,

17') and onto the inner wall (3) of the pipe (4) adjacent the pipe piece not covering the pipe piece, to form a coating material layer (8) on the inner surface of the pipe piece (17, 17') and the adjacent inner wall for sealing the auxiliary wall and the substantial hole (12) at said location."

The combination of the features of claim 1, in particular, the use of a rolled up pipe piece which is ultimately allowed to spring into direct contact with the inside surface of the pipe with no adhesive or coating layer, followed by a final spraying step which sprays all inner surfaces of the now expanded pipe piece and any surrounding inner pipe wall surface, to thus seal the pipe piece in place and effectively repair the large hole in the pipe.

Although the Examiner in the last action had rejected claim 1 as being obvious from a combination of Maimets (U.S. Patent 6,240,965) taken with Wrightson and Walker ('091), that rejection is respectfully traversed in view of the amended claim 1 now presented.

The dependent claims help further distinguish the invention over the prior art. In particular, claim 5 which utilizes the initially partly inflated bellow-like member (15) to move the pipe piece (17) into position at the location of the substantial hole and then to be expanded further to break the means (11) for holding the pipe piece closed (these features are in dependent claim 3, from which claim 5 depends), further distinguish the invention over the prior art even if the secondary reference to Siegel (U.S. Patent 5,285,817) is taken into consideration. Although Siegel does use a balloon that is expanded to break a wire 11 to allow a sleeve to open up, there is still the use of adhesive shown at 17 in Fig. 5 of Siegel between the outer surface of the sleeve and the inner surface of the pipe.

The present invention for the first time provides a method for effectively sealing a large hole in a pipe that minimizes difficulty and trouble by using a sleeve that is not initially

sealed to the inner surface of the pipe but that is subsequently sealed along with its surrounding pipe area by the final spraying step.

To reduce the number of issues presented the single product claim 18 has also been canceled.

By this amendment, thus, the application and claims are believed to be in condition for allowance and further favorable action is respectfully requested.

Respectfully submitted,
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